

Applicant traverses these rejections for the following reasons.

a) In the fifth paragraph on page 2 of his office action, Examiner makes the following statement:

"As to claim 130, providing a sinusoidal voltage at a pair of AC output terminals is misdescriptive since the disclosure as filed only supports a trapezoidal voltage across the inverter output terminals (figure 2, point M and ground, and figure 3A)."

Examiner is asked to look at Fig. 3D, wherein is depicted a "VOLTAGE ACROSS C"; which voltage is indeed sinusoidal. With reference to Fig. 2, this capacitor C is designated by the numeral 52 (see line 6 of the first paragraph on page 9 of the disclosure); which capacitor is connected directly across the inverter's output to the LOAD. Thus, there is indeed provided "a sinusoidal voltage at a pair of AC output terminals".

Hence, the above-referenced statement by Examiner is erroneous.

b) In the sixth paragraph on page 2 of his office action, Examiner makes the following statement:

"as to claims 130-135, claiming a substantially square wave output of the inverter terminals is also misdescriptive since figure 3 A shows a trapazoidal wave, with rise and fall times V and II being finite. A wave having finite rise and fall times does not come under the definition of a "substantially square wave" a wave characterized by lack of rise and fall times".

In response to this statement of Examiner, Applicant makes the following observations.

i) Claim 130 makes no reference to a "square wave voltage"; therefore Examiner's statement does not relate to claim 130.

ii) It is indeed true that Fig. 3A illustrates a trapezoidally-shaped wave. However, the "trapezoidalness" has been exaggerated for the purpose of clear description of what actually takes place during the transition period between the maximum negative amplitude to the maximum positive amplitude, and vice versa. In reality, as with virtually every inverter, the output voltage is a trapezoidal voltage with rise and fall times that are very short compared with the duration of a complete cycle. As is well known among those of ordinary skill in the art of inverters, although the inverter's output voltage in reality is of trapezoidal waveform, it is common to refer to it as a squarewave; and it would certainly be reasonable to refer to it as "a substantially squarewave voltage".

iii) When Examiner states that "a wave having finite rise and fall times does not come under the definition of a 'substantially square wave'", he makes a statement that Applicant believes to be totally erroneous and without foundation in the art of electrical engineering. A squarewave "characterized by lack of rise and fall times" simply does not and can not exist. Under presently known laws of physics, it is absolutely necessary that a squarewave have finite rise and fall times. There simply exist no inverter having a squarewave output voltage "characterized by lack of rise and fall times". Thus, so-called squarewaves actually and necessarily have trapezoidal or trapezoidal-like waveshape.

c) In the last paragraph on page 2 of the office action, Examiner refers to claim 130 and states that "the LC circuit is 'dangling' with no apparent relationship to the rest of the inverter".

In claim 130, there is a statement to the effect that "one terminal of said capacitor being connected with one of said AC output terminals"; which does provide for a relationship to the rest of the circuit.

In this connection, Applicant wishes to make clear that a claim should be read and interpreted in light of the specification.

However, if Examiner should find it desirable, Applicant would be willing to add a statement to claim 130 to the effect that the tank circuit is connected in circuit with the AC output terminals.

d) With reference to the last four lines on page 2 and the first three lines on page 3 of the office action, Examiner again refers to claim 130; and Applicant again refers to the need for interpreting the claim in light of the specification.

Examiner states that "every element of figure 2 is powered by and thus 'electrically connected' with the AC input terminals". Following that reasoning, every element and particle of the whole universe are "electrically connected" with each other, in that even the smallest motion of an electron transmits its effects into the vast regions of space, thereby making itself affect all other particles of matter in the universe.

Reading the claim in light of the specification should make it clear that "electrically connected" refers to direct or "wired" electrical connection.

If Examiner should find it necessary, Applicant would be willing to modify claim 130 such as to make it clear that "electrically connected" means "electrically connected substantially without any intervening impedance".

j) Also in the third full paragraph on page 3, Examiner states that "it is not seen why the L-C circuit is part of the inverter in claims 130 and it is part of an inverter output circuit in claim 134 and also in claim 135".

In this connection, Applicant wishes to point out that claim 130 comprises an "inverter circuit"; which inverter circuit, in turn, comprises "an L-C tank circuit".

On the other hand, claims 134 and 135 each comprise an "inverter" (note: not an "inverter circuit"), and this "inverter" does not (necessarily) comprise an L-C tank circuit.

Examiner is requested to read and interpret the claims more accurately, thereby to avoid much unproductive prosecution effort.

k) In respect to Examiner's statements in the last paragraph on page 3, Applicant makes the following observations:

i) Now as before, the inverter frequency as determined by the saturable core may or may not be the same as the resonant frequency of the L-C circuit. However, this issue is mostly irrelevant in connection with claim 135.

ii) Claim 135 states that "the frequency of this sinusoidal voltage being equal to said fundamental frequency"; which statement implies that the higher harmonics of the inverter's squarewave voltage output must have been filtered away, which indeed will be the case if the L-C circuit has a natural resonance frequency that is anywhere near that of the (fundamental frequency of the) squarewave output voltage.

1) In lines 3-4 on page 4 of the office action, Examiner states (in respect to claim 135) that "the last three lines are meaningless". To Applicant, the last three lines of claim 135 are perfectly clear. They deal with the issue of "physically and directly connecting an AC input terminal with an AC output terminal", as was raised by Examiner in the first full paragraph on page 3 of the office action.

m) In the first full paragraph on page 4 of the office action, Examiner in effect asserts that Applicant's claims do not contain enough structure to be allowable under Section 112, second paragraph. To this, Applicant contends that -- to any person of ordinary skill in the art of electronic inverters -- each individual element of each claim is readily understandable and attainable on the basis of present art. The required structure is provided by the various specified combinations of the various individual elements.

ARGUMENTS IN SUPPORT OF CLAIMS

In re Independent Claim 130

Examiner rejected claim 130 under 35 U.S.C. 103 as being unpatentable over Rhoads in view of Walden and Elms.

Applicant traverses this rejection for the following reasons.

a) In the last two lines on page 4 and in the first line on page 5 of the office action, Examiner states that "Fig. 2A of Rhoads discloses the combination of rectifier means BR1 and a half-bridge inverter Q1, Q2 and C1, C2 to be old".

Applicant accepts that proposition; but so what?

b) In fact, Applicant is willing to accept that, if having the motivation for doing so, a person of ordinary skill in the art would be able to attain the invention of claim 130 from elements of the applied references.

However, in view of Authorities #5, #6, #10, #11 and #12, even if a claimed invention may be attained by combination the three applied references, there is no reason to consider this combination to be obvious except if:

i) (#5) there is evidence "that a person of ordinary skill in the art at time of applicant's invention would have expected problem to exist" -- the "problem" referring to the problem for which the claimed invention represents a solution;

(In this connection, it is obvious that the "problem" referred-to in #5 must be a problem that for its solution requires all the elements of the claimed invention. General (or "motherhood") problems which may be solved by a variety of different inventions obviously do not qualify as "problems" in the context of Authority #5.)

ii) (#6) there "be a reason apparent at time invention was made to person of ordinary skill in the art for applying the teaching at hand";

(What would that reason be? Examiner has provided no explanation, merely an assertion of obviousness.);

iii) (#10) at least one of the references contains a "suggestion to use what it discloses in combination with what is disclosed in the other" references;

iv) (#11) one of the references contains "something to suggest the desirability of the combination";

v) (#12) "something in the prior art references would suggest the advantage to be derived from combining their teachings".